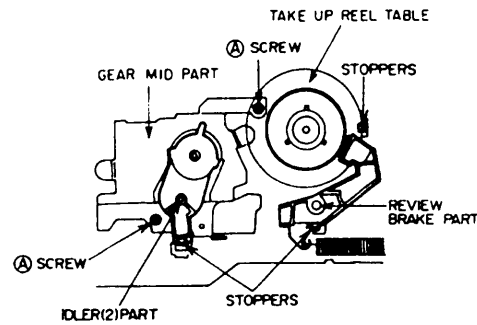


Description	Part No.	Description	Part No.
Slider Front Loading	ML-387428J	SP Pull Main Brake	ZG-387320J
Slider Pinch Part	ML-387431J1	SP Pull Review Brake	ZG-387323J
SLIT W17X032X025PSL	ZW-374445	SP Pull Tension (2)	ZG-395470J
SP Loading Brake	ZG-387467J	SP Push A/C	ZG-387438J1
SP Plate Earth	ZG-392294J	SP Torsion Arm Damper	ZG-395567J
SP Plate Holder	ZG-387348J1	SP Torsion Damper (S)	ZG-387421J
SP Pull Main Brake	ZG-387320J	SP Torsion Damper (T)	ZG-388290J1
SP Pull Review Brake	ZG-387323J	SP Torsion Joint (2)	ZG-392831J
SP Pull Tension	ZG-387272J	SP Torsion Load (S)	ZG-387417J
SP Push A/C	ZG-387438J1	SP Torsion Load (T)	ZG-387418J
SP Torsion Arm Damper	ZG-395567J	SP Torsion Release	ZG-387420J1
SP Torsion Damper (S)	ZG-387421J	SP Torsion Review	ZG-387282J
SP Torsion Damper (T)	ZG-8290J1	ST BID30X06STL CMT	ZS-358936
SP Torsion Joint (2)	ZG-392831J	ST BID30X12STL CMT	ZS-336714
SP Torsion Load (S)	ZG-387417J		
SP Torsion Load (T)	ZG-387418J	Tension Arm Blk F600EA	BL-V1123A050A
SP Torsion Release	ZG-387420J1	Holder Lever Tension	SZ-3872631J4
SP Torsion Review	ZG-387282J	Tension Band Part	ML-390768J4
		Tension Brake Part	MZ-395471J3
<b>For Models:</b>		<b>For Models:</b>	
<b>VS-F490EM/EO/EOH/ES</b>		<b>VS-F480EK-V/EOG-V</b>	
<b>VS-F497EOH</b>		<b>VS-F490EM/EO/EOH/ES</b>	
<b>VS-F480EK-V/EOG-V</b>		<b>VS-F497EOH</b>	
6SET20X030SCM PKR FP	ZS-374458	Arm Coupling	ML-387311J2
6SET30X080SCM PKR CP	ZG-373900	Belt Capstan (3)	MB-407117J
Arm Damper	ML-391745J3	PC (#) Sensor (2)KFX	EA-404543J
Arm Lid Opener	ML-387350J1	BID30X03STL CMT	ZS-425981
Arm Loading BLK 425EA	BL-V1102A140A		
Arm Pinch Roller		Capstan Brake Part	LK-387458J2
BLK F410EK	BL-V1130A160A	Cord FFC P1.25 L=12013P (WP1)	EW-389313J
Arm Review Part	ML-387277J3	D LED GL451 Infrared (D1)	ED-390011J
Arm Shutter	ML-387349J2	Detector SG-105LF (PH1)(PH2)	ET-403420J
BID30X08STL CMT	ZS-321298	Disk Clutch (2) Part	MZ-404577J
Cassette Load BLK 425EA	BV-V1102A150A	Gear Cam Slider (3)	MZ-404538J
Cushion Cover	SZ-391866J1	Gear Front Loading	MZ-387333J
DISK (3) Part	MT-404547J	Gear Toggle(S) BLK 425EA	MZ-V1102A090A
DT BID30X06STL		Gear Toggle(T) BLK 425EA	MZ-V1102A100A
CMT C080	ZS-389853J	Gear Worm (2)	MZ-401686J1
Gear Eject	MZ-387335J	Gear Worm Wheel	MZ-387332J
Gear MID Part	MZ-404995J	Holder D-LED	MZ-387430J
Guide Front (2)	SE-395554J	Holder Photo Sensor (2)	MZ-404542J
Guide Roller D8 Part	VT-387394J1	Holder S Sensor	MZ-387445J
Head Combo HVMZA1121A	HR-405340J	Holder Thrust Worm	MR-387406J
Head E HVFME0020A	HE-390013J	Lever Trigger	ML-387402J1
Holder FE Head Part B	MZ-402760J2	Motor DFX-67B3VWB1 (Capstan Motor)	BM-400682J1
Idler (2) Part	MI-404552J	Motor Part (Loading Motor)	BM-387503J
Leader S BLK 425EA	BV-V1102A070A	PT BID26X06STL CMT	ZS-365149
Leader T BLK 425EA	BV-V1102A080A	PT BID26X10STL CMT	ZS-389950J
Lever Damper (S)	ML-387345J	Pulley Trigger (2)	MR-391968J
Lever Damper (T)	ML-387346J	PW26X060X050PSL	ZW-389923J
Lever Lock Release	ML-387344J	Slider Brake (3) Part	ML-404567J1
Main Brake (S) Part	ML-387316J	Slider Trigger (2)	ML-404944J
Main Brake (T) Part	ML-387318J	SLIT W21X040X050PSL	ZW-387492J
Mecha Deck BLK F410EK	B-V1130A020C	Socket 174074-5 SP (P1)	EJ-381837J
Nut Review	ZW-401776J	Socket Housing	
PAN20X02STL BZN PS1	ZS-404844J	5062-30-10-13 (PS1)	EJ-387497J
Pinch Roller (2) Part	MP-404852J	SP Pull Capstan Brake	ZG-387502J
Plate Upper	MZ-387351J2	SP Pull Slider	ZG-387468J
PW31X110X050PSL	ZW-389814J	SP Pull Toggle	ZG-387413J1
Retaining Ring Grip		SP Torsion Coupling	ZG-387403J
380STL ACP	ZW-332843	SP Trigger	ZG-387443J
Review Brake (3) Part	ML-407119J	ST BID30X06STL CMT	ZS-358936
Roller Impedance	MR-387286J1	SW Leaf MTS10110MPC1	ES-373099
Slider Front Loading	ML-387428J	SW Mode Select	
Slider Pinch Part	ML-387431J1	MMS00070ZLBO (SW1)	ES-387465J
SLIT W17X032X025PSL	ZW-374445	TR Photo PN268 (TR1)	ET-361490
SP Plate Earth	ZG-392294J	TR Photo PT493F (TR4)	ET-390009J
SP Plate Holder	ZG-387348J1		

## Replacement of the Gear Mid Part (JFX Only)



1) Remove the REVIEW BRAKE PART and IDLER (2) PART.

2) Release the stopper of the TAKE UP REEL TABLE, then remove it.

3) Remove the two "A" screws then replace the GEAR MID PART as shown above.

4) Reassemble in reverse order.

### Precautionary items prior to adjustments

1. The colour bar generator output should be 1.0 Vp-p.
2. The video output terminal should be terminated with 75 ohms (connect dummy load or 75 ohms input TV).

The following test tapes are required.

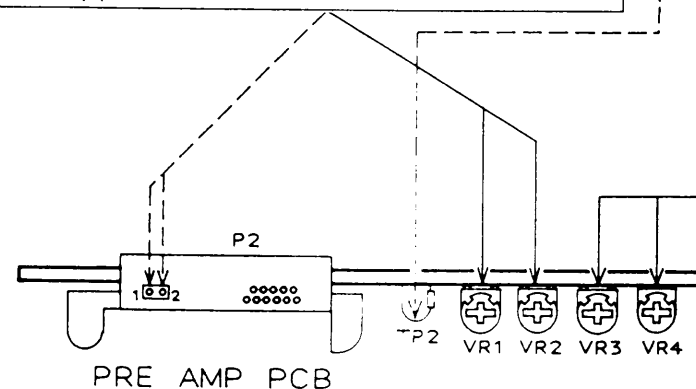
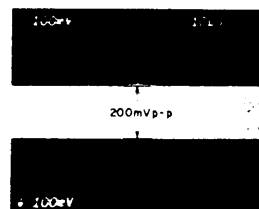
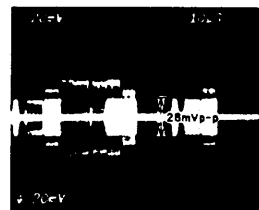
Test tape	Parts No.
TF-527BL	AT-711880
TF-530RFS	AT-751775
TF-532CBS	AT-751360
TF-553AT	AT-751785

### STEP ADJUSTMENT ITEM

1. MODE and INPUT SIGNAL/TEST TAPE
2. TEST POINT and ADJ. part
3. REMARKS (\*) & RESULT (\*)

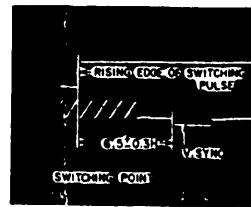
### 6 VIDEO REC CURRENT (LP MODE)

1. "REC" (LP MODE), PAL colour bar signal
2. P2 (REC.CURR) ① pin, ② pin & VR1 (REC-CHROMA), VR2 (REC-Y)
3. • Connect an oscilloscope's CH-1 to P2 (REC.CURR) ① pin and CH-2 to ② pin.
  - Set the oscilloscope's display mode to "ADD" mode and CH-2 polarity to "INVERTED". (Make sure to set the oscilloscope's "volt / div" SW position where the waveform is not distorted and CH-2 position should be the same as CH-1.)
  - Turn the VR2 (REC-Y) fully, counterclockwise.
  - Adjust VR1 (REC-CHROMA) so that the chroma REC current becomes 28 mVp-p at the burst signal area.
  - Disconnect the input signal, then adjust VR2 (REC-Y) so that the Y REC current becomes 200 mVp-p.



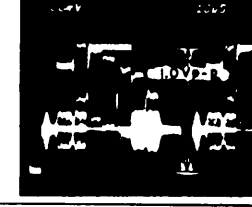
### 1 PB SWITCHING POINT

1. "PB", test tape TF-530RFS
2. TP2 (SWP), VIDEO OUT & VR301 (SW.POINT)
3. • Connect an oscilloscope's CH-1 to TP2 (SWP) for triggering and CH-2 to VIDEO OUT.
  - Adjust VR301 so that the switching point is positioned 6.5 H from the V-SYNC left edge as shown.



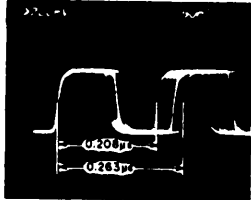
### 7 VIDEO PB LEVEL

1. "REC" → "PB", PAL colour bar signal
2. VIDEO OUT & VR404 (PB LEVEL)
3. • Connect an oscilloscope to VIDEO OUT
  - Make a recording on the tape, then play it back
  - Adjust VR404 so that the PB level becomes 1.0 Vp-p



### 5 CARRIER SET & DEVIATION

1. "REC", PAL colour bar signal
2. TP401 (REC.Y) & VR402 (CARRIER), VR403 (DEVIATION)
3. • Connect an oscilloscope to TP401 (REC.Y)
  - VR402 (CARRIER) : 0.263 μs (3.8 MHz)
  - VR403 (DEVIATION) : 0.208 μs (4.8 MHz)



### 3 AUDIO REC BIAS

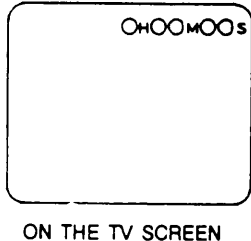
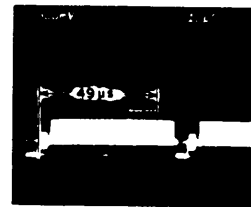
1. "REC", No signal input
2. P801 ① pin, ② pin & VR801
3. • Connect an AC voltmeter to P806 ① pin (GND side) and ② pin. (Never connect the AC voltmeter's GND to the VCR's ground.)
  - Adjust VR801 so that the reading on the AC voltmeter becomes 2.4 mV

### 2 AUDIO PB LEVEL

1. "PB", test tape TF-527BL
2. AUDIO OUT & VR802
3. • Connect AC voltmeter to AUDIO OUT
  - -5 dBs

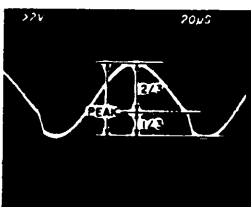
### 8 CHARACTER POSITION

1. "E-E" (STOP mode), No signal input
2. VIDEO OUT, TV screen & VC601 (IMS)
3. • Press the "DISPLAY" button once on the remote control to display the elapsed tape counter.
  - Connect an oscilloscope to VIDEO OUT
  - Adjust VC601 (IMS) so that the right end of the IMS signal becomes 49 μs from the H-SYNC as shown.



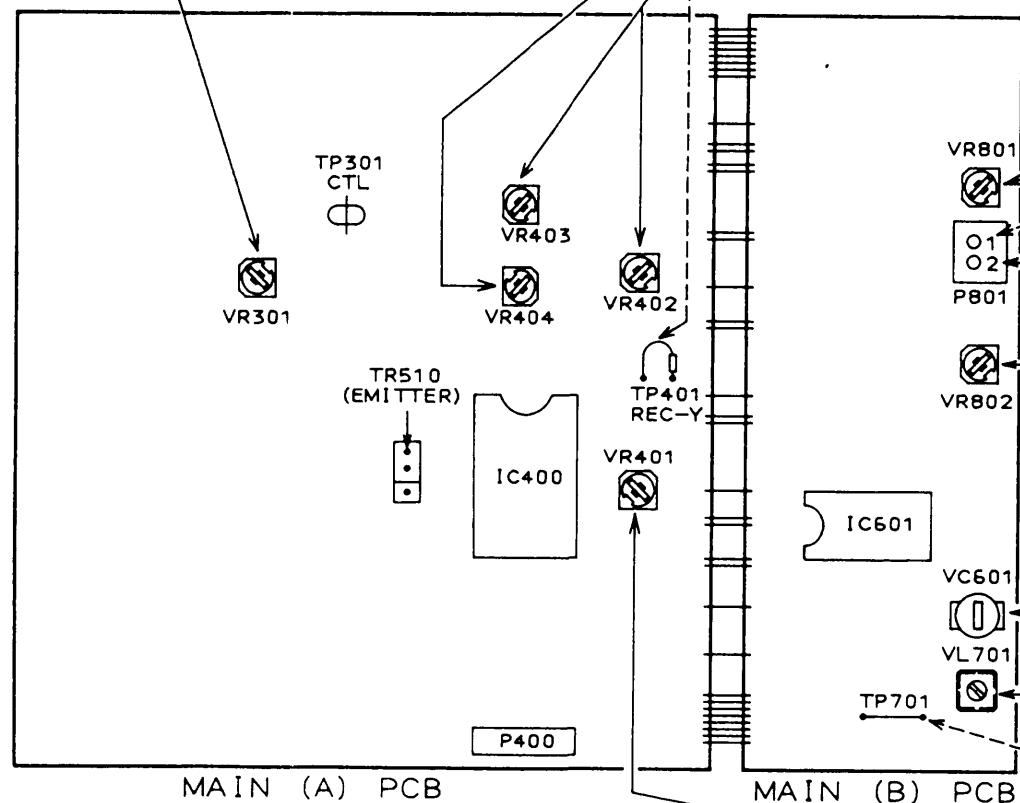
### 9 P/S AUTO SENSITIVITY (EM/EDG/EOG-V ONLY)

1. "E-E" (STOP mode), SECAM colour bar signal
2. TP701 (P/S SENS), VL701 (P/S SENS)
3. • Connect an oscilloscope to TP701 (P/S SENS)
  - Adjust the VL701 so that the distorted point of the waveform becomes 1/3 from the bottom, as shown.



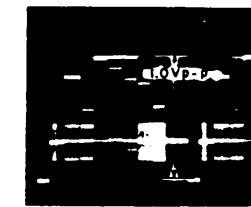
### 10 ENVELOPE DETECT (I-HQ)

- (This adjustment should be performed in the "TEST" mode.)
- To set the VCR to the "TEST MODE", press and hold both the "POWER" and "EJECT" buttons on the front panel, then plug in the AC power cord.
- The TEST MODE can be cancelled by disconnecting the AC power cord or simply by pressing the RESET button on the front panel.
1. "REC" → "PB", PAL colour bar signal
  2. FL display & VR3, VR4
  3. • Record the PAL colour bar signal on the test tape TF-553AT and then play it back.
    - Observe the number which is displayed on the minute part of the FL display.
    - Adjust the VR3 so that the number displayed on the FL display becomes "8D". (SP MODE)
    - Adjust the VR4 so that the number displayed on the FL display becomes "8D". (LP MODE)



### 4 VIDEO E-E LEVEL

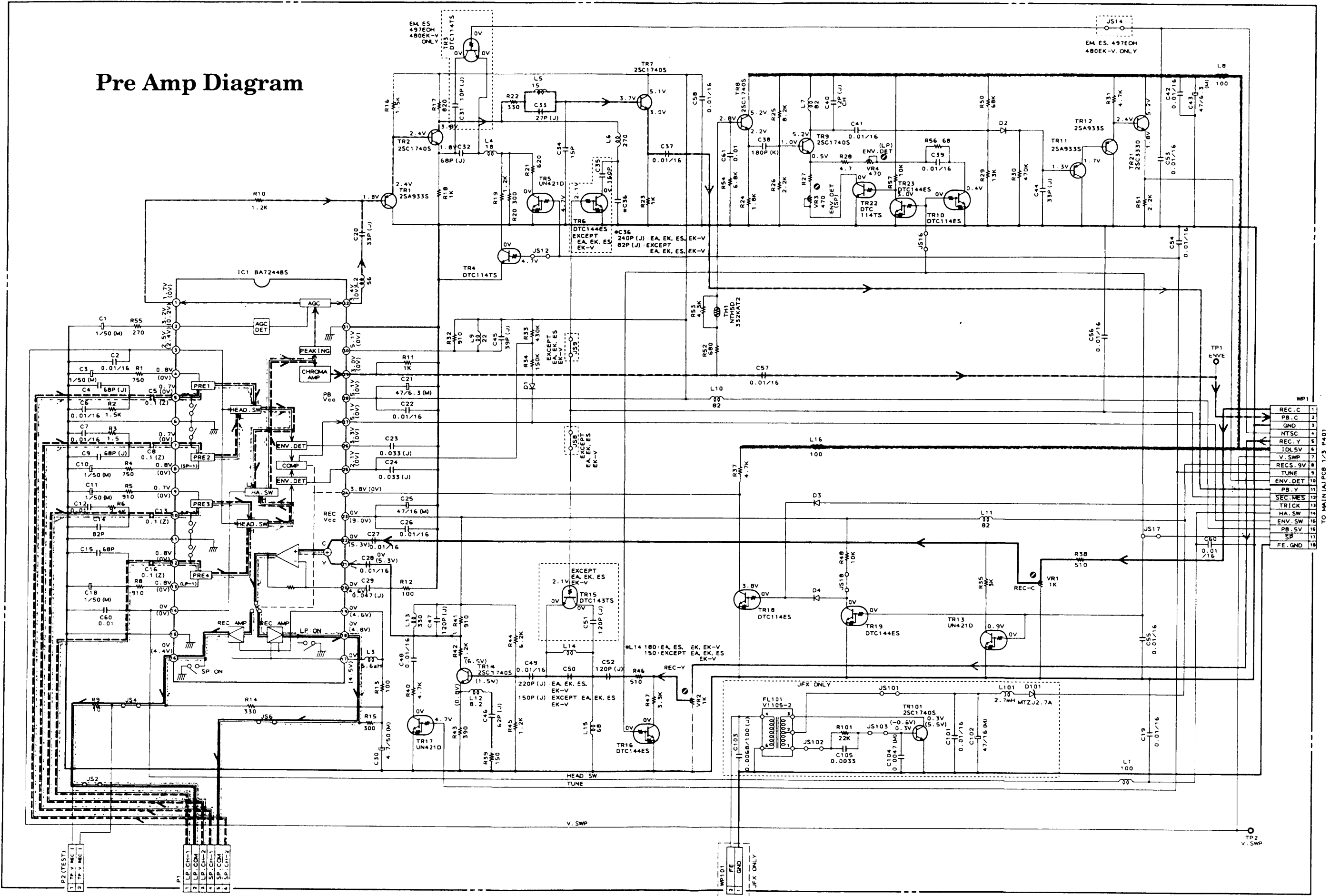
1. "E-E" (STOP mode), PAL colour bar signal
2. VIDEO OUT & VR401 (E-E LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
  - 1.0 Vp-p







Pre Amp Diagram



TO VIDEO HEAD BLOCK

PRE AMP PCB V1134B5030

- B (POWER SUPPLY) LINE
- PB Y SIGNAL LINE
- REC Y SIGNAL LINE
- PB CHROMA SIGNAL LINE
- REC CHROMA SIGNAL LINE

TO FULL TRACK ERASE HEAD

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.  
( ) REC MODE

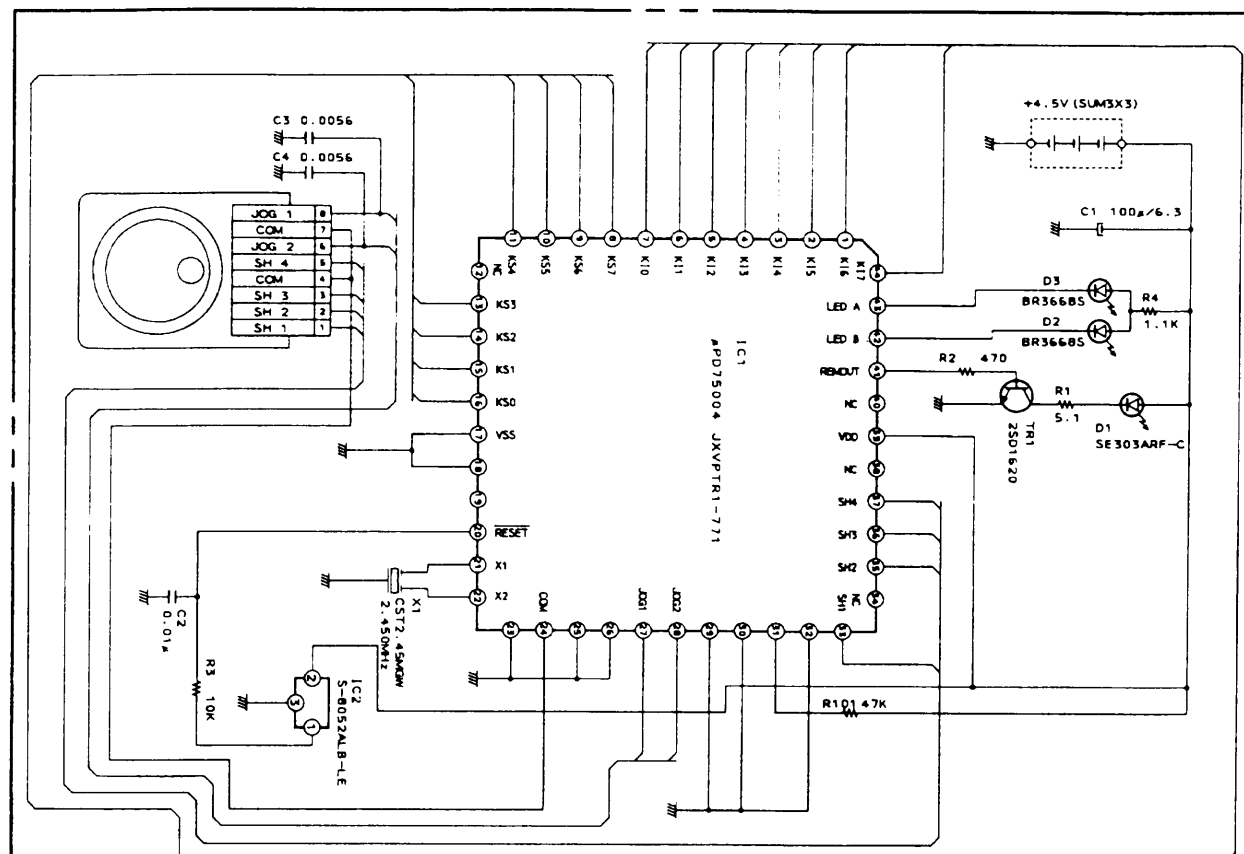
NOTE  
UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS IN OHMS  
ALL CAPACITORS IN pF  
ALL INDUCTORS IN mH (K)  
ALL DIODES ARE 1SS131  
TRANSISTORS 2SA933S AND 2SC1740 CAN BE  
SUBSTITUTED FOR 2SA1317 AND 2SC3330 RESPECTIVELY

JFX/JFX-L  
PRE AMP





## Remote Control Diagram RC-V451E



K10	TV/VCR	1		0	AV	SP/LP	3	2
K11	SHIFT	4	TEXT/TV	7	0	3	6	5
K12	SHIFTV		REW		00/SHUTTLE		INDEX	
K13	SHIFTA	1+AG	RED	PLAY	FF/BD	GREEN	CYAN	YELLOW
K14	SN/CANCEL	REMAIN	INDEX		CHANNEL		DISPLAY	COUNTER RESET
K15	SHIFT	TIMER		STOP	00/PAUSE/STILL		INDEX	DOUBLE HEIGHT
K16	AUTO TRACKING	REC O	POWER	EJECT	MONITOR		CH. UP A	CH. DOWN V
K17	OK	PROG LIST	VPT	PROGRAM		STOP/7	NEXT	MENU

UNLESS OTHERWISE SPECIFIED ALL RESISTORS IN OHMS 1/8W (J) ALL CAPACITORS IN $\mu$ F 50WV (J)	NOTE UNLESS OTHERWISE SPECIFIED ALL RESISTORS IN OHMS 1/8W (J) ALL CAPACITORS IN $\mu$ F 50WV (J)
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RC-V451E/G

RC-V452E